PHENIX

Technical Support 2008

PHENIX
WEEKLY PLANNING

2/21/2008

Don Lynch

Run 8 Task Schedule

Technical Support 2008

Item	Start	Finish
RPC support	On Going	On Going
CM Crane design review	2/1	2/28
Next scheduled Maint. Day?	2/27	2/27
Mu Trigger FEE Prototype II install	2/27	2/27
Complete new beampipe design	2/29	2/29
End PP run	3/12	3/12
Low energy Run	3/13	3/14
End of Run 8	3/15	5/27
Install new UPS	~3/15	~3/31
End of Run Party	4/4	4/4
Install Gas house UPS's	4/15	6/13
Install HBD	7/15	9/15

Next Maintenance Access: Feb 27th

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Install and Test Mu Trigger prototype FEE

Field fit CM access stair hardware

Evaluate cable paths for MuTrigger FEE's

Other Tasks ?

CM Ladder/Stair Shutdown Access

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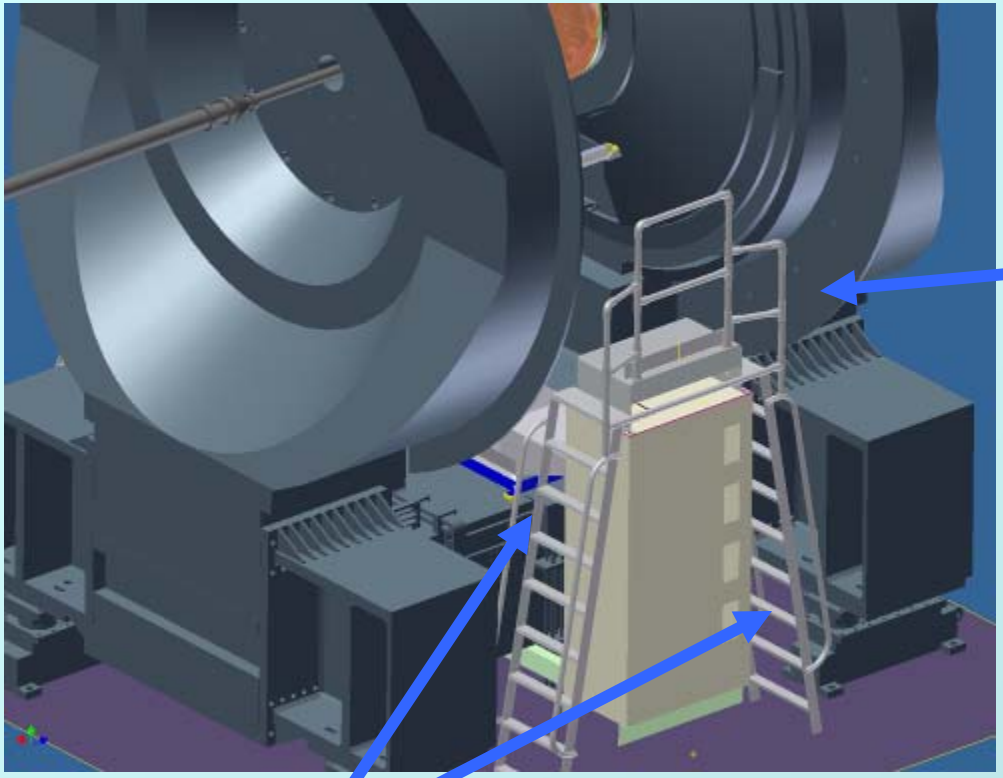

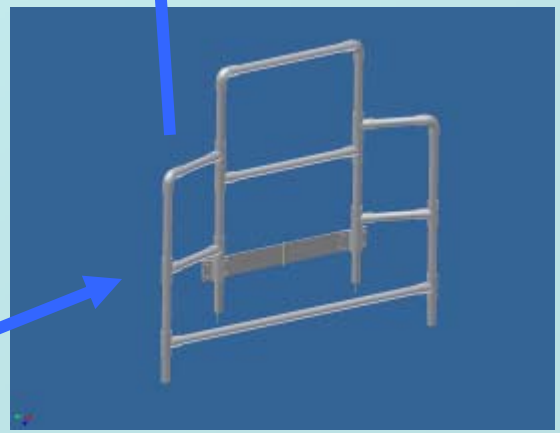

Ladders done

Railing to be ready
for next access

Design Reviews

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- Mu Trigger FEE Prototype (Done)
- CM Crane (analyses complete)
- MMN Scaffolding 2/22
- New Beampipe Review 3/3-3/14
- Station 1 Scaffolding 3/3 – 3/7
- RPC Prototype 3/25 (Prototype design, installation, gas system, electronics, safety)
- Mu Trigger FEE N & S 3/19
- MuTrigger N & S rack platform 4/21-5/2
- RPC Stations 1, 2 and 3 6/22-6/20
- VTX/FVTX review 8/1-8/31
- NCC Review 8/1-8/31
- MMS scaffolding 2/2/09-2/6/09

Items Needed for Design Review

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March 2008: RPC prototypes and MuTrigger FEE upgrades

RPC Group:

Detailed Layouts for RPC2 & RPC3 Mechanical assembly including detailed weights, materials, dimensions of components and subassemblies.

Detailed layout for the Cu absorber

Prototype Gas system requirements including gas mixture, flow rates, pressures, pressure drops, piping requirements (quantity/lengths, materials, OD, wall thickness. Prototype gas delivery/distribution/control/safety schematic including requirements for relief valves, gauges, valves, etc. Be prepared to address all gas safety issues.

Prototype rack requirements including power, cooling water, etc. and rack component layout.

Detailed installation scheme for prototypes including list of fixtures and special tools required for installation, transportation requirements (i.e. evaluation of level of care to take in moving transporting and orienting the prototypes from the factory through installation. Also include a list of infrastructure modifications required to install the prototypes.

Detailed scheme for installing the Cu absorber for prototype including list of fixtures and special tools required for installation.

Detailed description of all electronics requirements internal to the prototype detectors, in the prototype rack, and in the rack room. Include all safety issues for all items (fusing, grounding, Recognized lab ratings, e.g. UL, etc.)

Other integration requirements, e.g. DAQ requirements

Outlines for gas system and electrical system operating procedures.

Items Needed for Design Review

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March 2008: RPC prototypes and MuTrigger FEE upgrades
Mu Trigger FEE Group:

Detailed Layouts for FEE enclosure assembly including detailed weights, materials, dimensions of components and subassemblies.

Cooling water and air requirements for FEE's including flow rates, pressures, pressure drops and temperature control requirements. Provide schematics for water and air distribution including valves, gauges, etc.

Rack requirements including power, cooling water, etc. and rack component layout.

Detailed installation scheme for FEE's including list of fixtures and special tools required for installation..

Detailed description of all electronics requirements internal to the FEE's, in the racks, and in the rack room. Include all safety issues for all items (fusing, grounding, Recognized lab ratings, e.g. UL, etc.)

Other integration requirements, e.g. DAQ requirements

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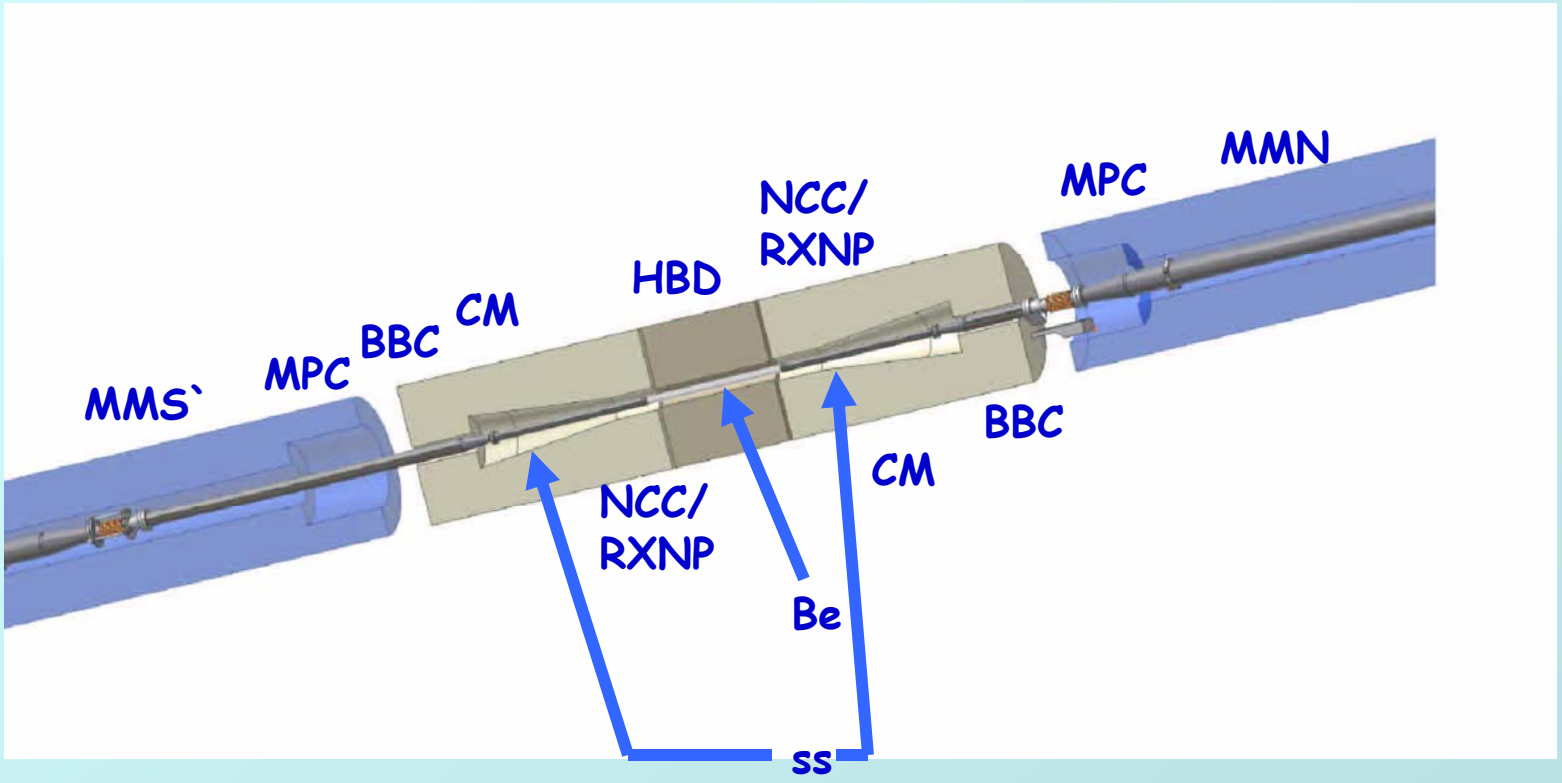
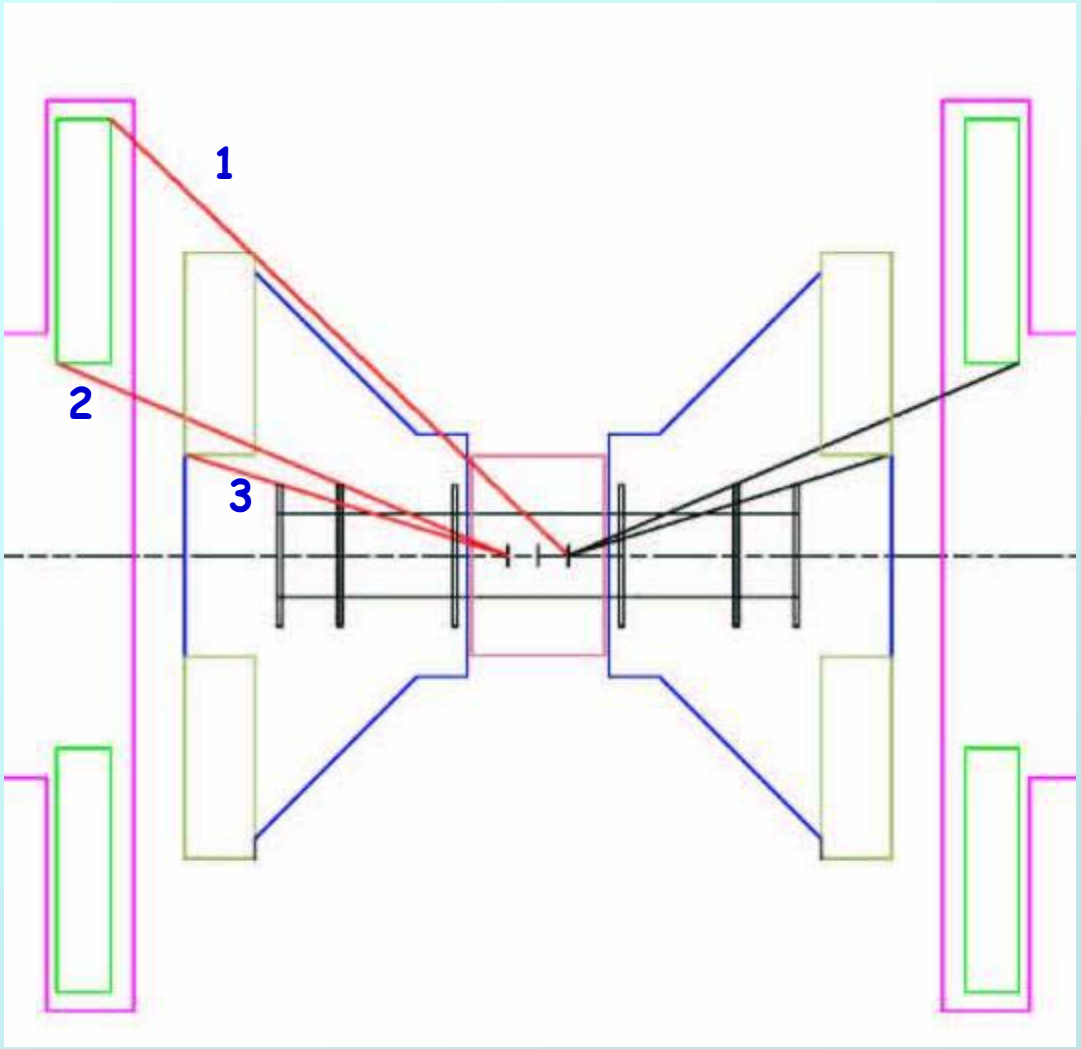
New Beampipe Design & Review



New Beampipe Design & Review



Anamorphic view

Normal (run) position

1. MPC&BBC max shadow

2. MPC no shadow

3. BBC no shadow

Issues to be resolved

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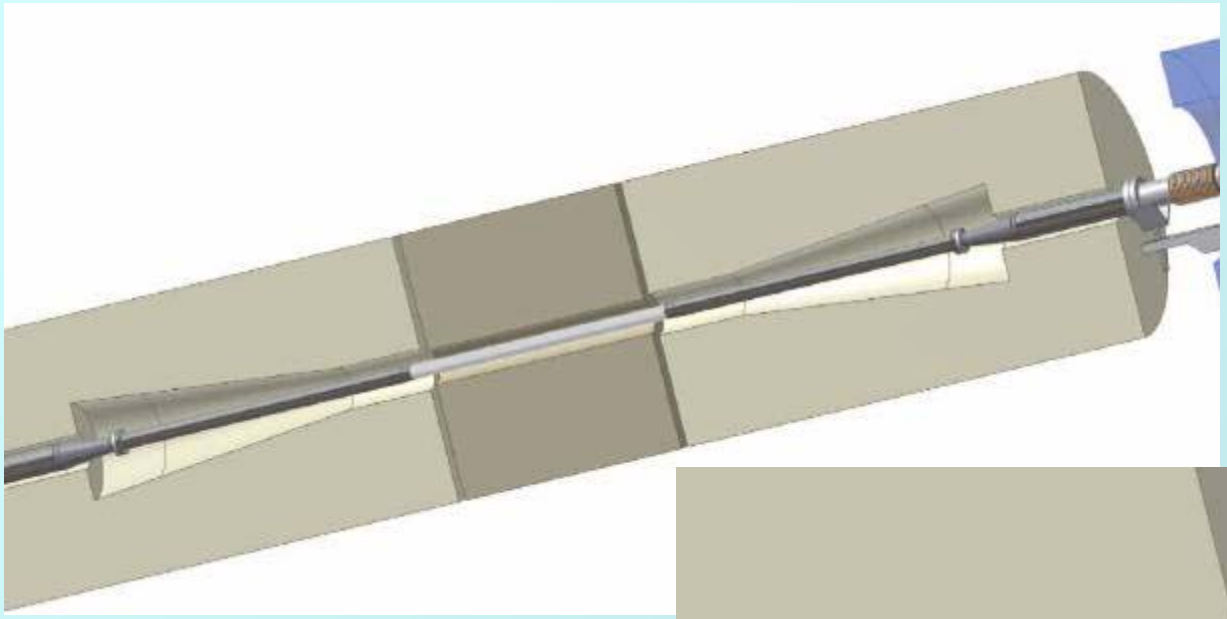

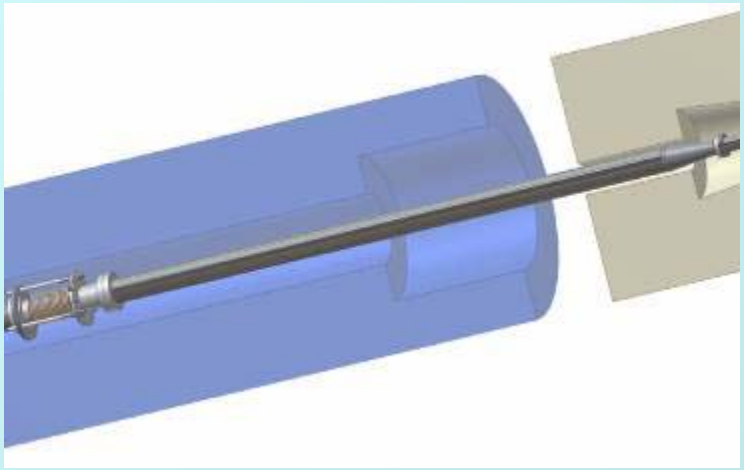

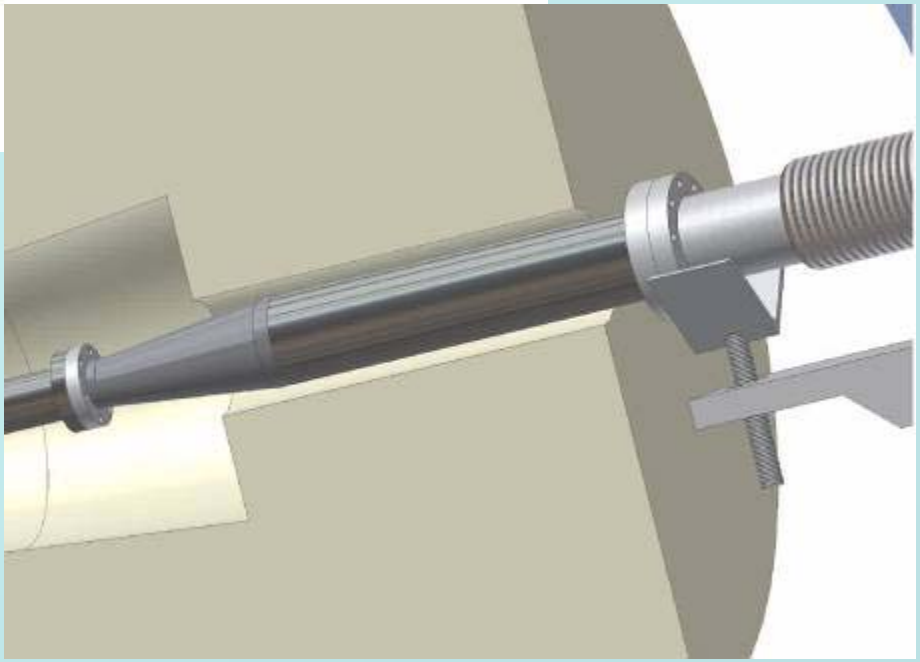

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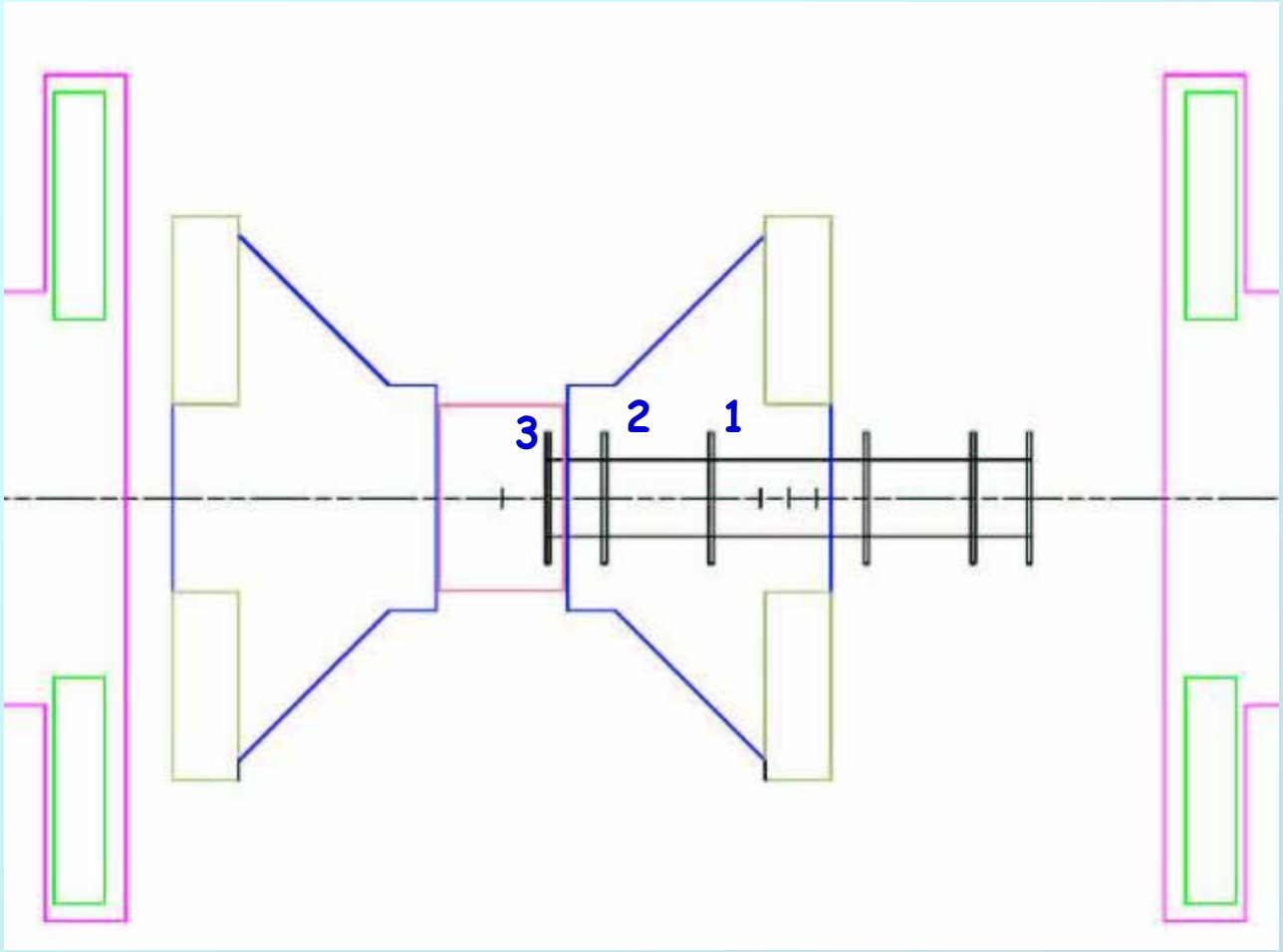
New Beampipe Design & Review



Anamorphic view

CM moved south position

1.Flange in NCC

2. Flange does not shadow MPC partial shadow of BBC. Only accessible in mid-move position

3. Flange does not shadow BBC or MPC Accessible in this position

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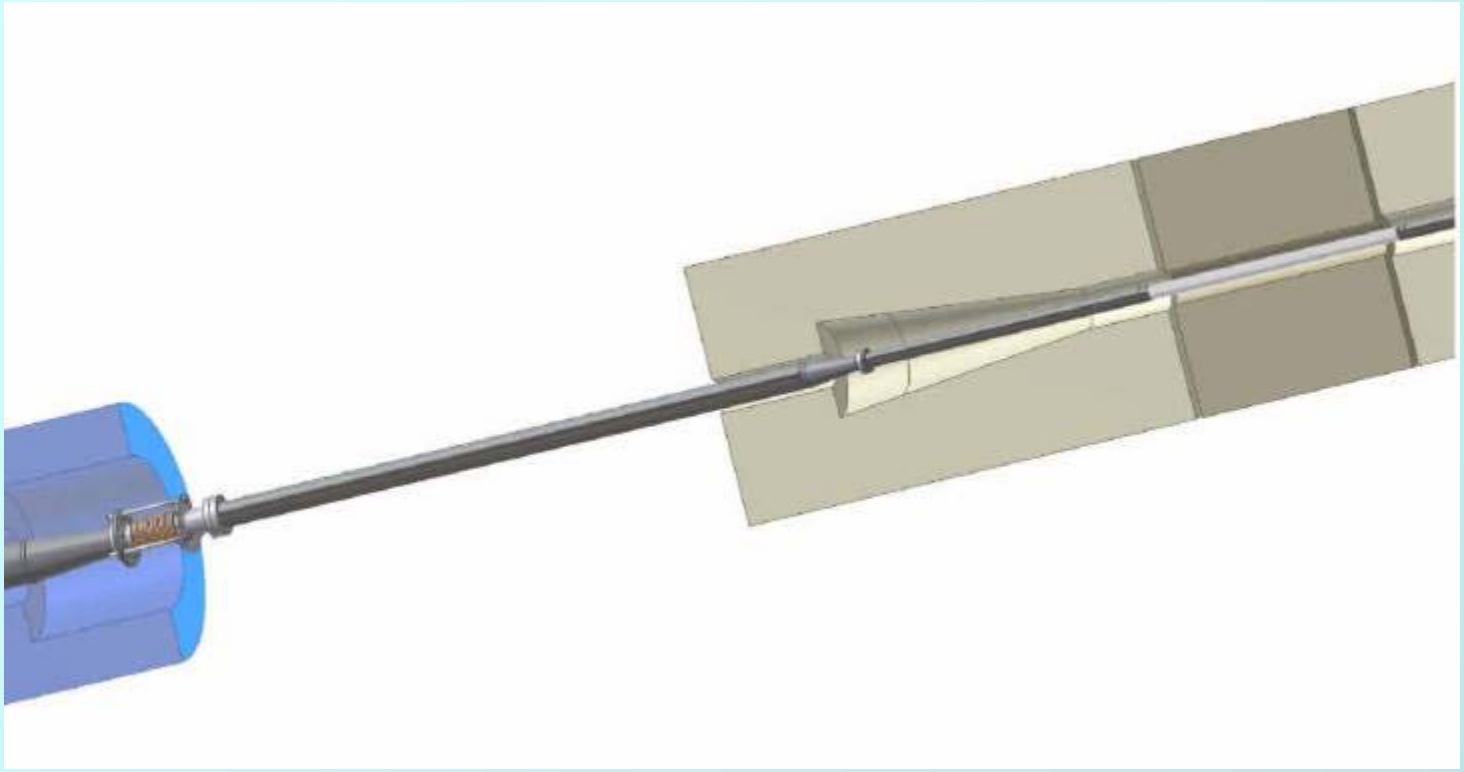

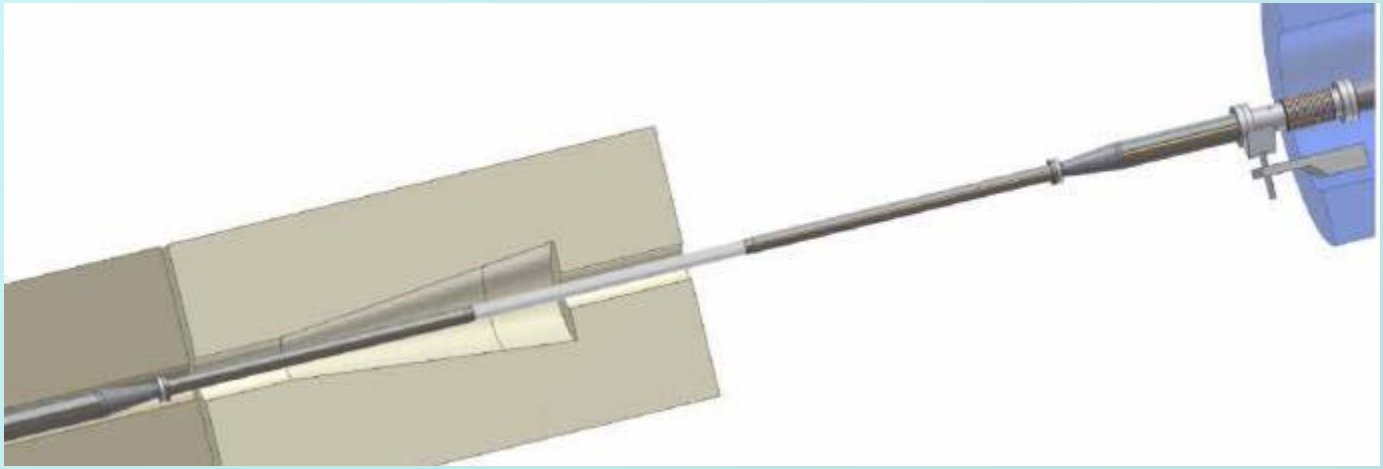

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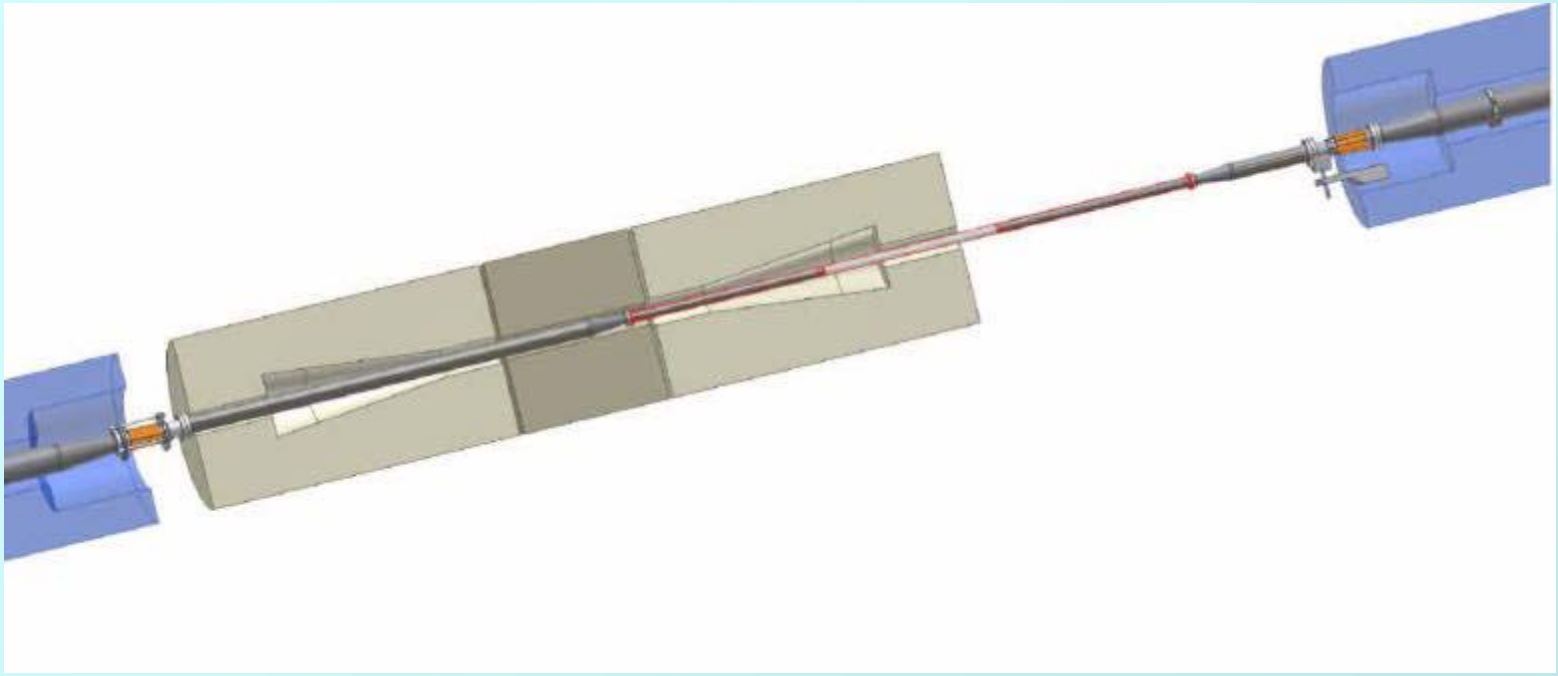
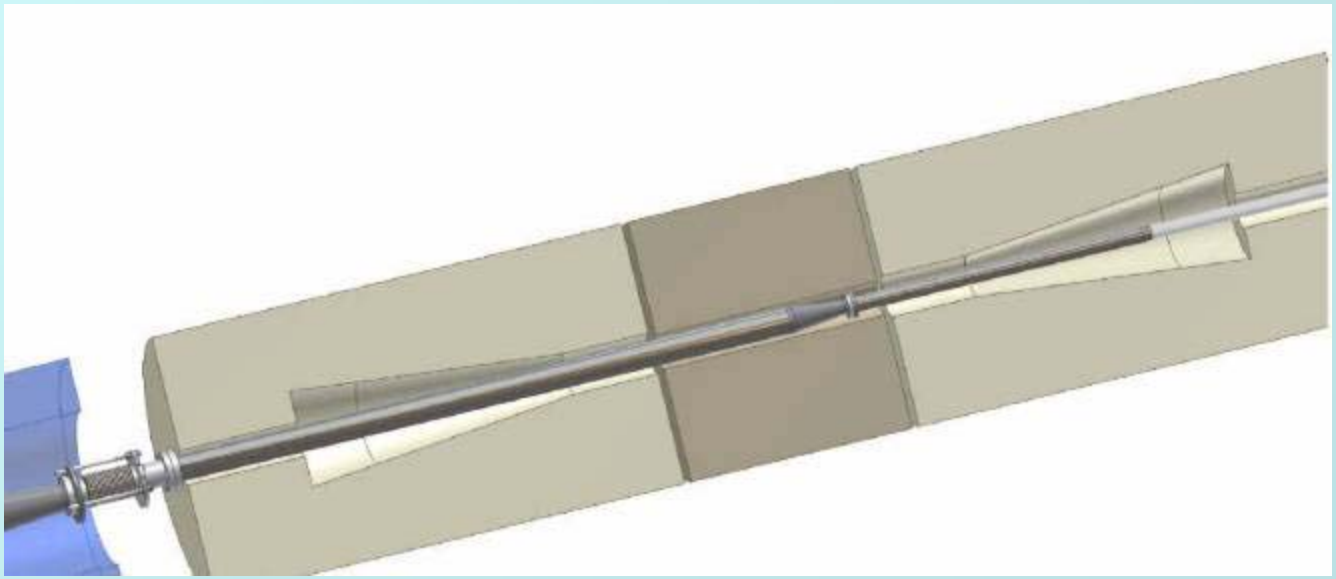
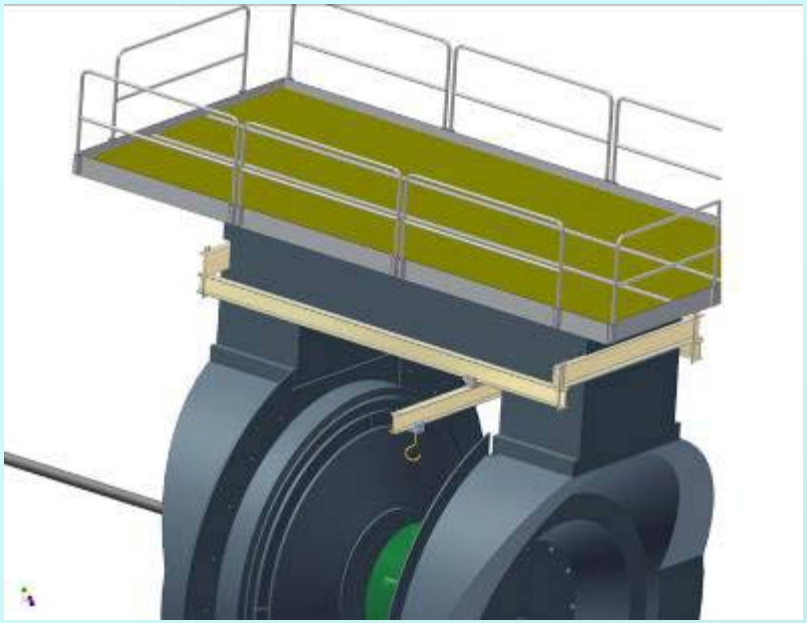




CM Crane



- Uses Gorbel 1-ton capacity Ceiling mounted Bridge Crane, modified to be supported by 2 Steel Channels attached to CM
- Bridge and hoist to be removed for running.
- Crane Design ready for review


PHENIX Relativistic Heavy Ion Collider (RHIC) PHENIX Experiment

BROOKHAVEN NATIONAL LABORATORY

ENGINEERING CALCULATION

TITLE: Central Magnet Bridge Crane

PREPARED BY: Don Lynch, P.E.

CHECKED BY:

Introduction

Waiting for design review.

Tuozzolo on vacation until next Monday.

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Muon Trigger Rack Platforms

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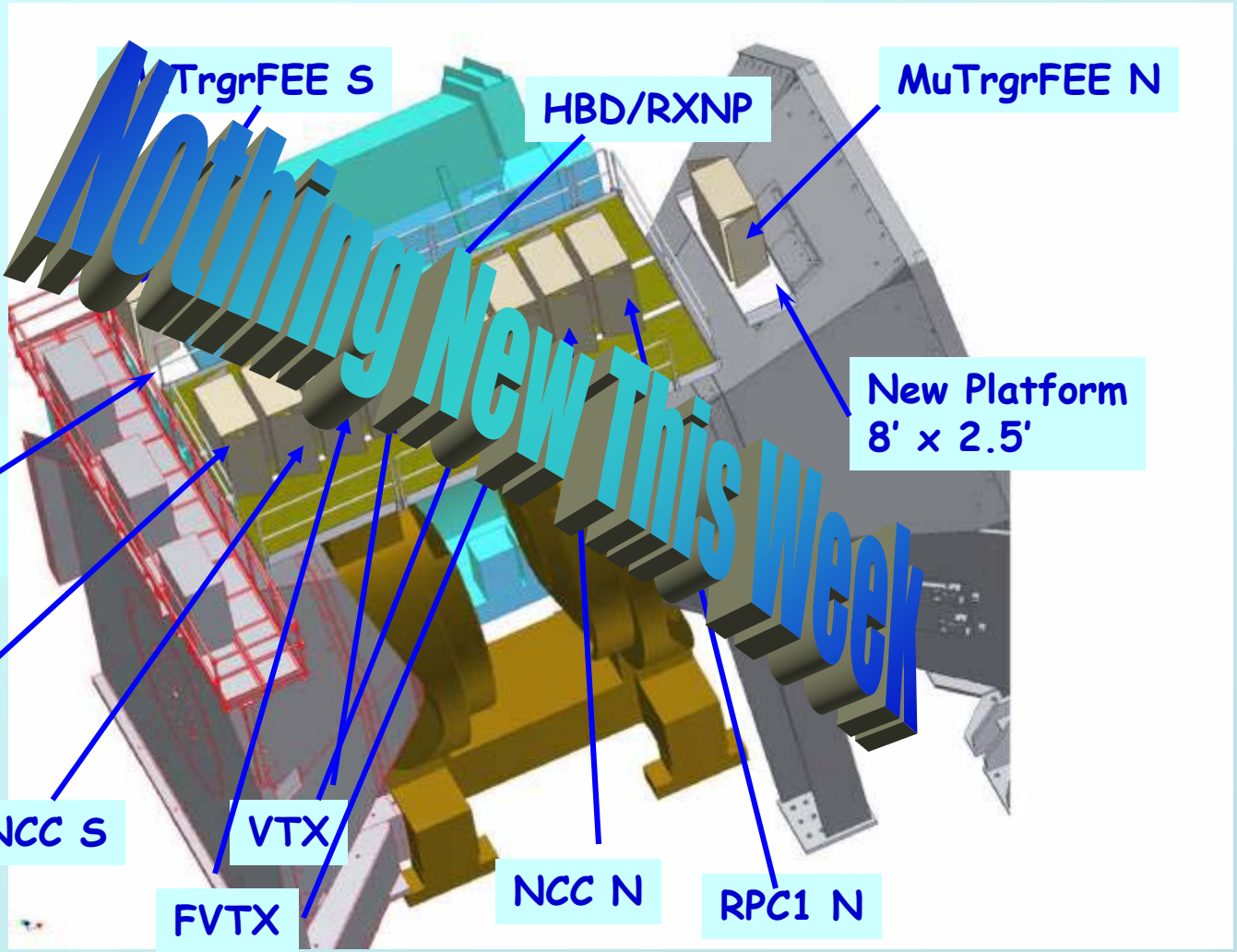
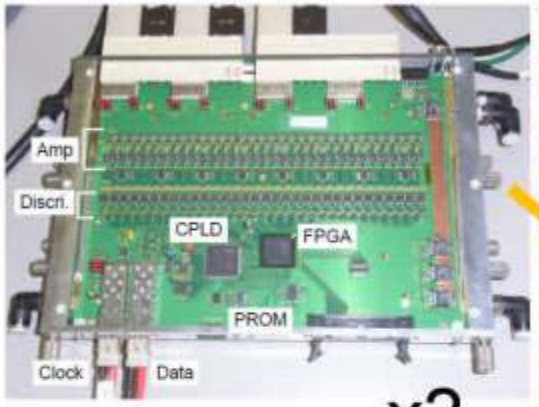


New ADTX Board Test @ IR

Feb. 21, 2008
PHENIX Planning Meeting
Yoshinori Fukao

MuTr North, Station-2, Octant-7



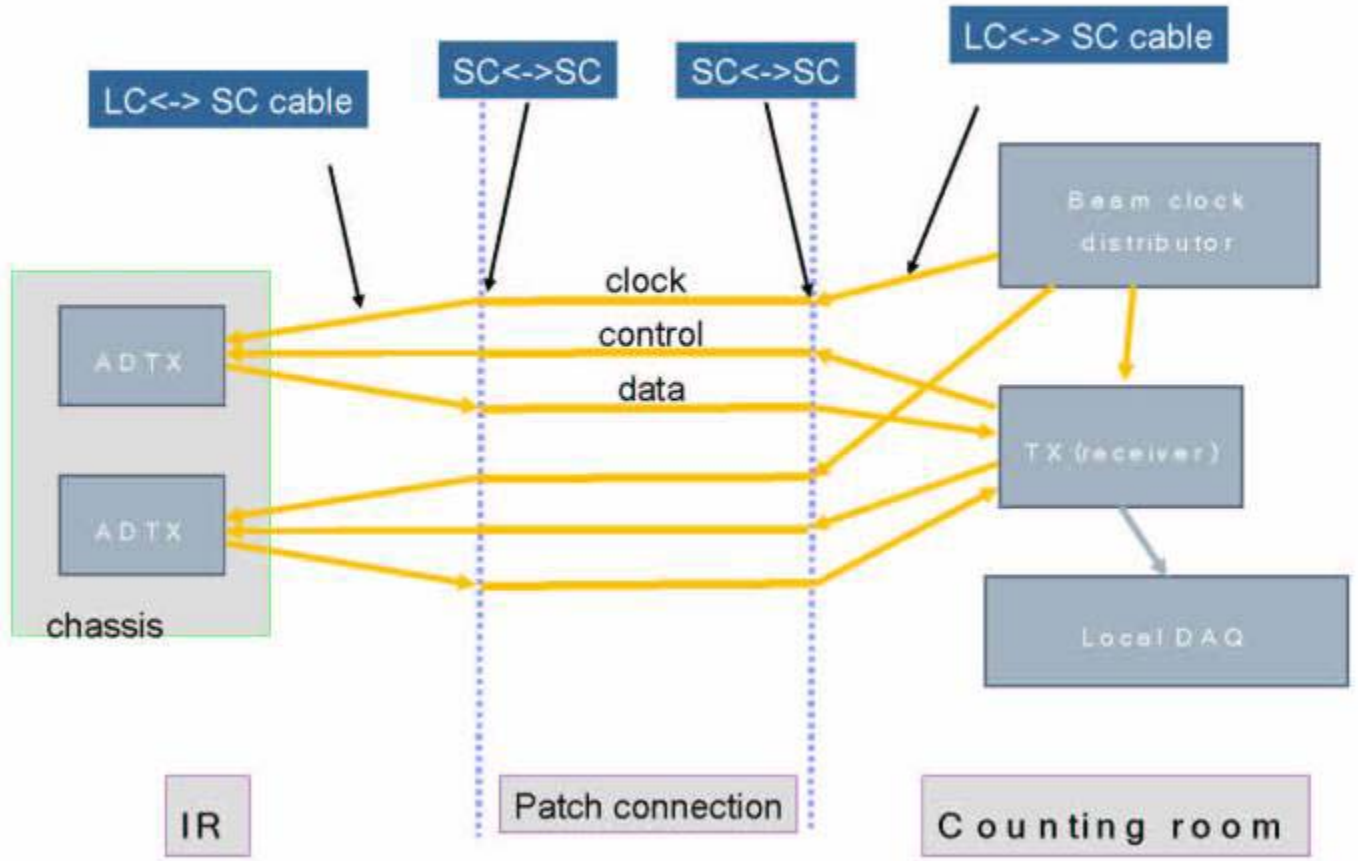
x2

6 optical cables

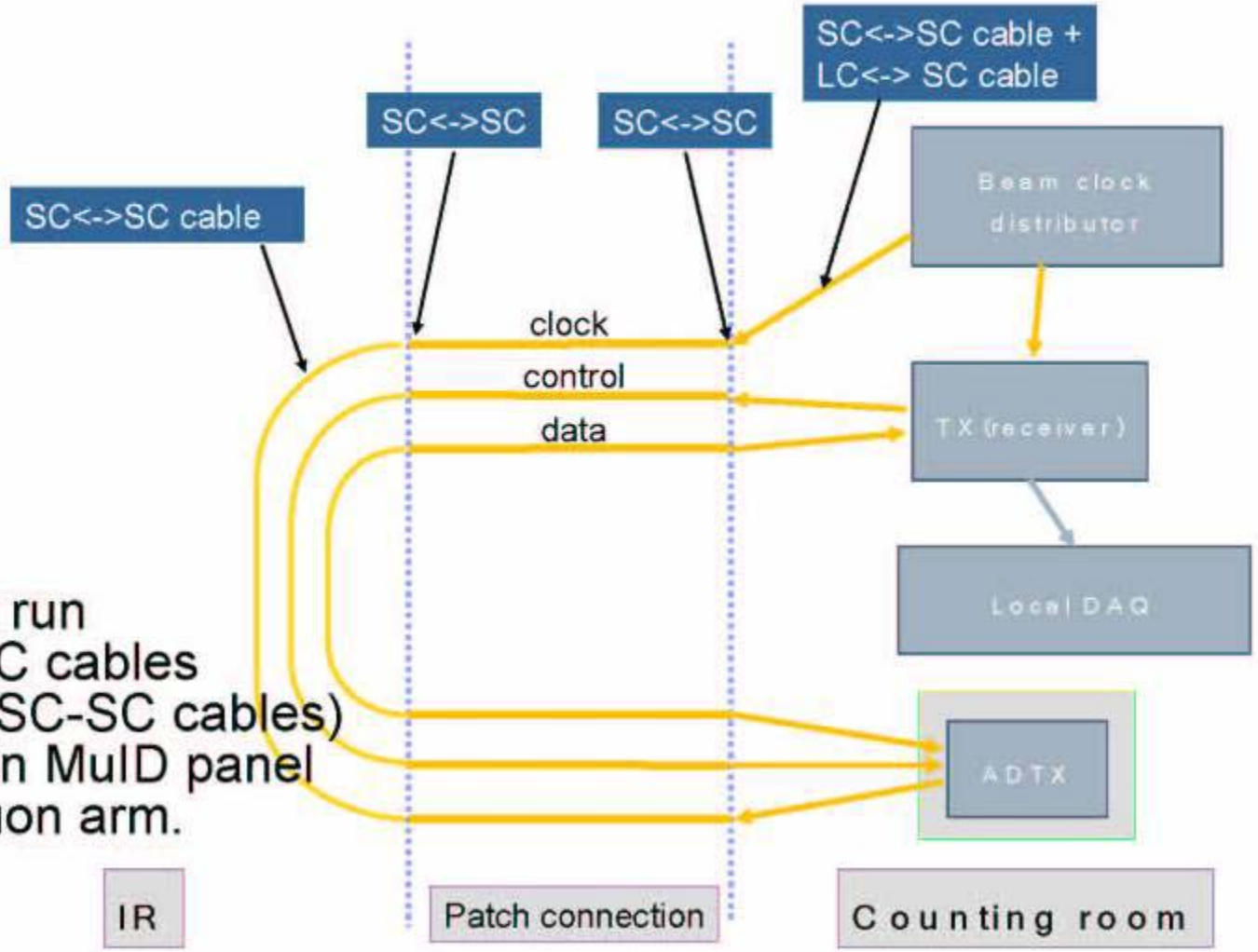
1 LV cable

- MuTRG boards will be installed on the 2nd FEE from left.
- 48 strips from gap-2 and 3 each will be connected to the boards.

Setup Scheme



Test of Optical Patch



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Test Schedule (Basic)

1. Check initial performance of MuTr (Noise / Gain).

2. Install cables, MuTRG–chassis, tubes for cooling.
   (We will need help of technician.)

3. Install boards step by step checking noise
   > Install boards one by one.
   > Check PHENIX LV. (Can we replace fuse for LV?)

4. Flow cooling water

5. Examine performance of MuTr and MuTRG boards.
   > Measure noise and gain of MuTr FEE.
   > Measure noise on MuTRG boards.
   > Check dependence of threshold of MuTRG.

6. Uninstall
   > Bring out tools used for the test.
   > (Remove all items after Run8 finished.)

Expected Time at Install

> Hatch open (10min.)
> Gas leak check (1/2hr)

> MuTRG chassis mount w/o board (Jimmy, 1/2hr)
> Water pluging w/o water flow (John T., 1hr)

> Run optical cables. Check optical patch. (MuTRG group, 1hr)

> Install 1st board + cabling
Data taking + noise check
(MuTRG group, 1hr)

> Install 2nd board + cabling
Data taking + noise check
(MuTRG group, 1hr)

> Flow cooling water (John T.)

----> Start data taking with several configuration

Items to be installed / uninstalled in IR

light + code	remove after test
ladder	remove after test
styrofoam for MuTr protection	remove after test
MuTRG ADTX board + chassis	left in IR
cables (MuTR FEE – MuTRG-ADTX)	left in IR
cables (LV)	left in IR
cables (optical)	left in IR
cooling water tubes + insert ring	left in IR

Backup Solutions for Possible Scenarios

1. Check initial performance of MuTr (Noise / Gain).
2. Install cables, MuTRG–chassis, tubes for cooling.
   > If remote connection thru patch fails,
   we must bring our Local DAQ into IR.
3. Install boards step by step checking noise
   > When noise is too large,
   - Try some grounding patterns.
   - Try reproduce summer test performance. (Install old AD+TX)
   - Use our LV module.
4. Flow cooling water
5. Examine performance of MuTr and MuTRG boards.
6. Uninstall
   > Remove our LV module
   > Remove one of MuTRG boards from chassis.(If problem in LV)
   > Bring out our Local DAQ setup from IR.
   > If some crucial problem, we may remove all items installed
   including boards, chassis, cooling tubes.

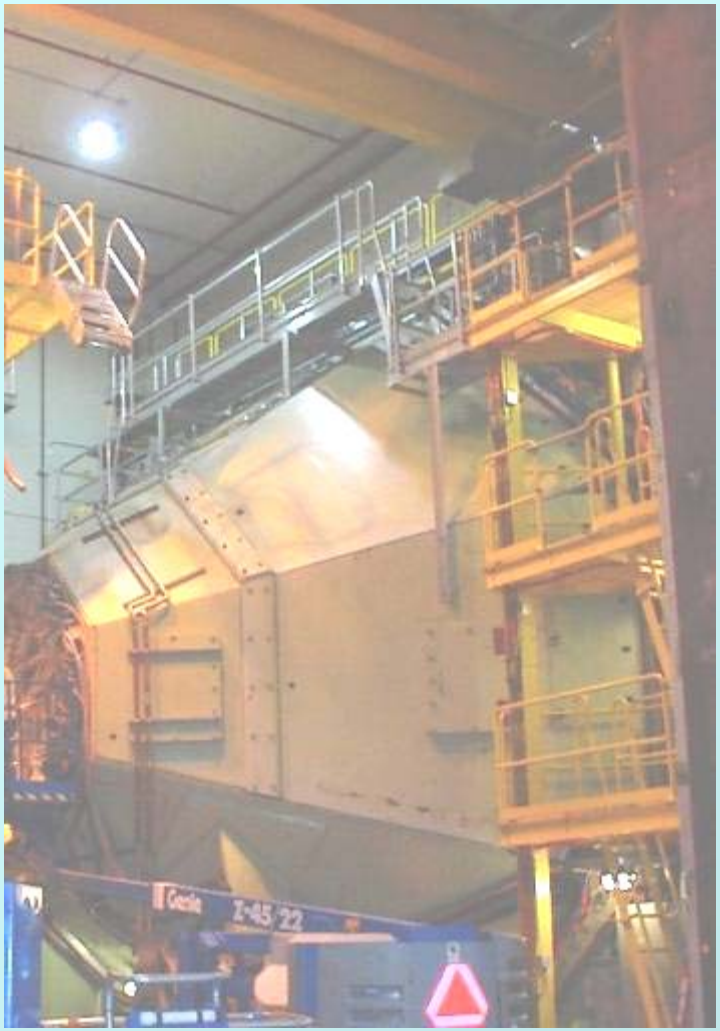
Optional items to be in IR

MuTRG-AD board + chassis	remove after test
MuTRG-TX board + chassis	remove after test
cables (MuTRG-AD – MuTRG-TX)	remove after test
cooling water tubes + insert ring	remove after test
vectro tape to hold chassis	remove after test
insulated sheet	remove after test
DAQ PC	remove after test
VME crate + modules	remove after test
NIM crate + modules	remove after test
LEMO cables + connector	remove after test
LV modules	remove after test
conductive tape	remove after test
table	remove after test

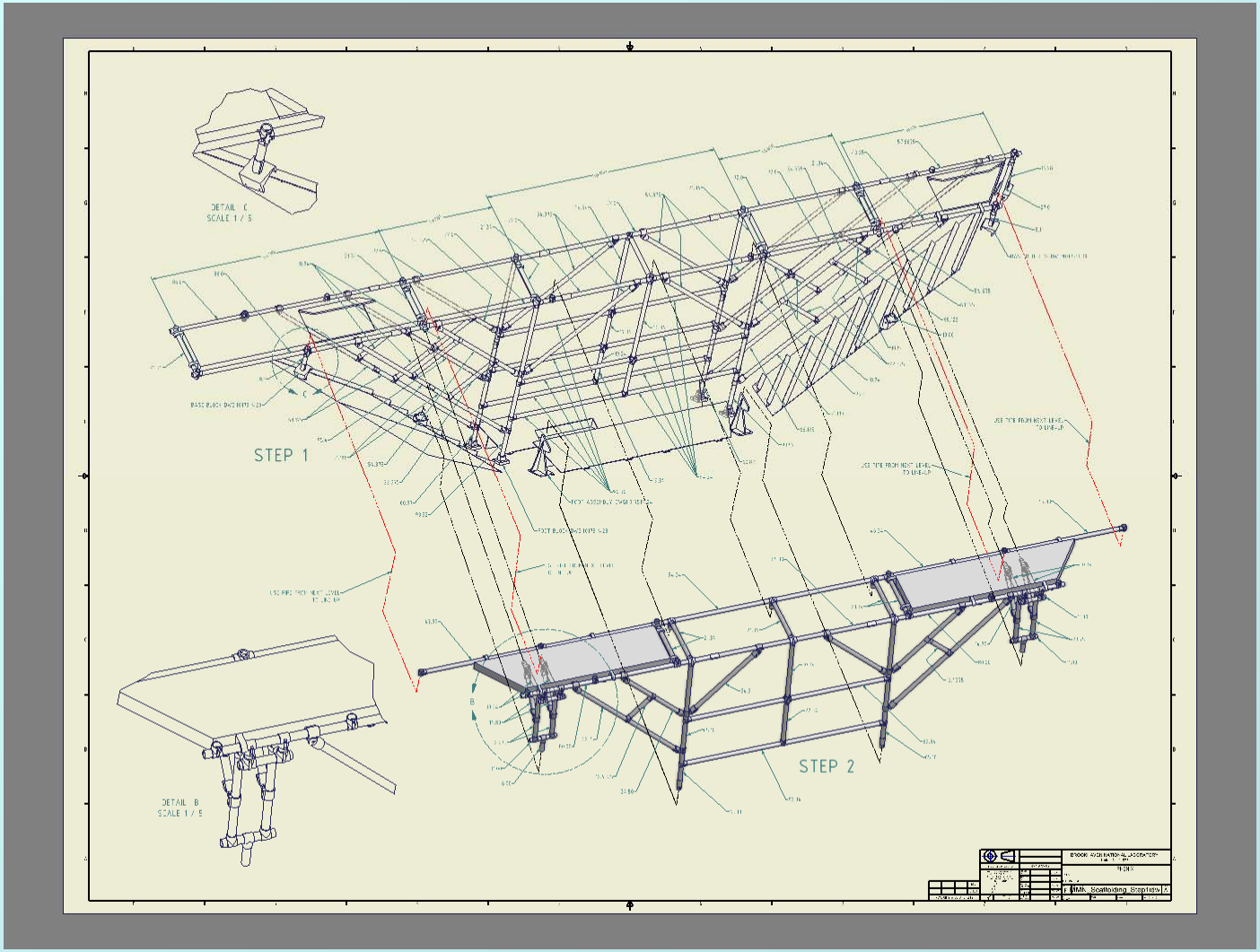
Old MuTRG-AD and TX boards

Mu Trigger FEE Cable Management

Need to know quantities, sizes and routing



MMN Scaffolds



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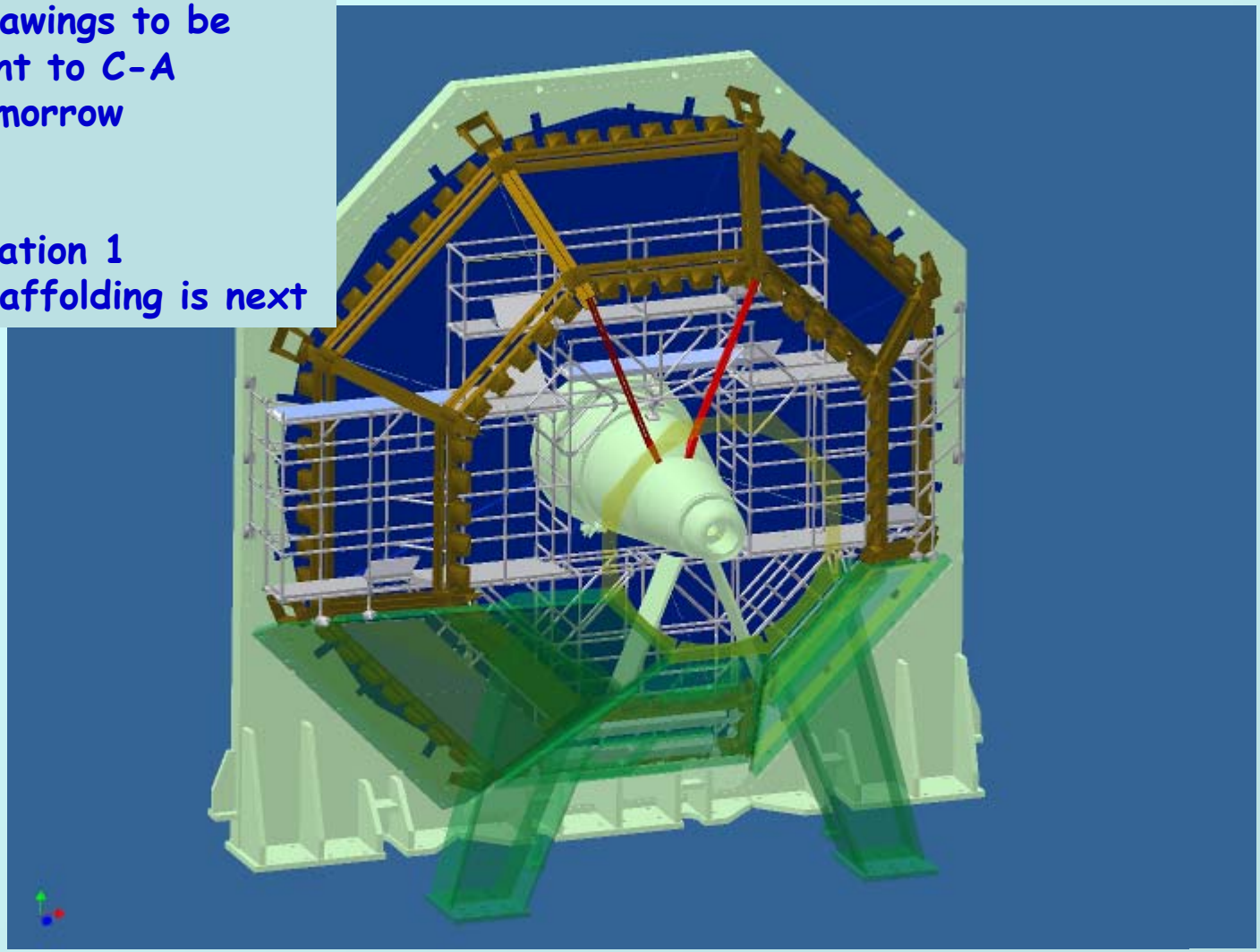
MMN Scaffolds

Design is complete.

Drawings to be sent to C-A tomorrow

Station 1 Scaffolding is next



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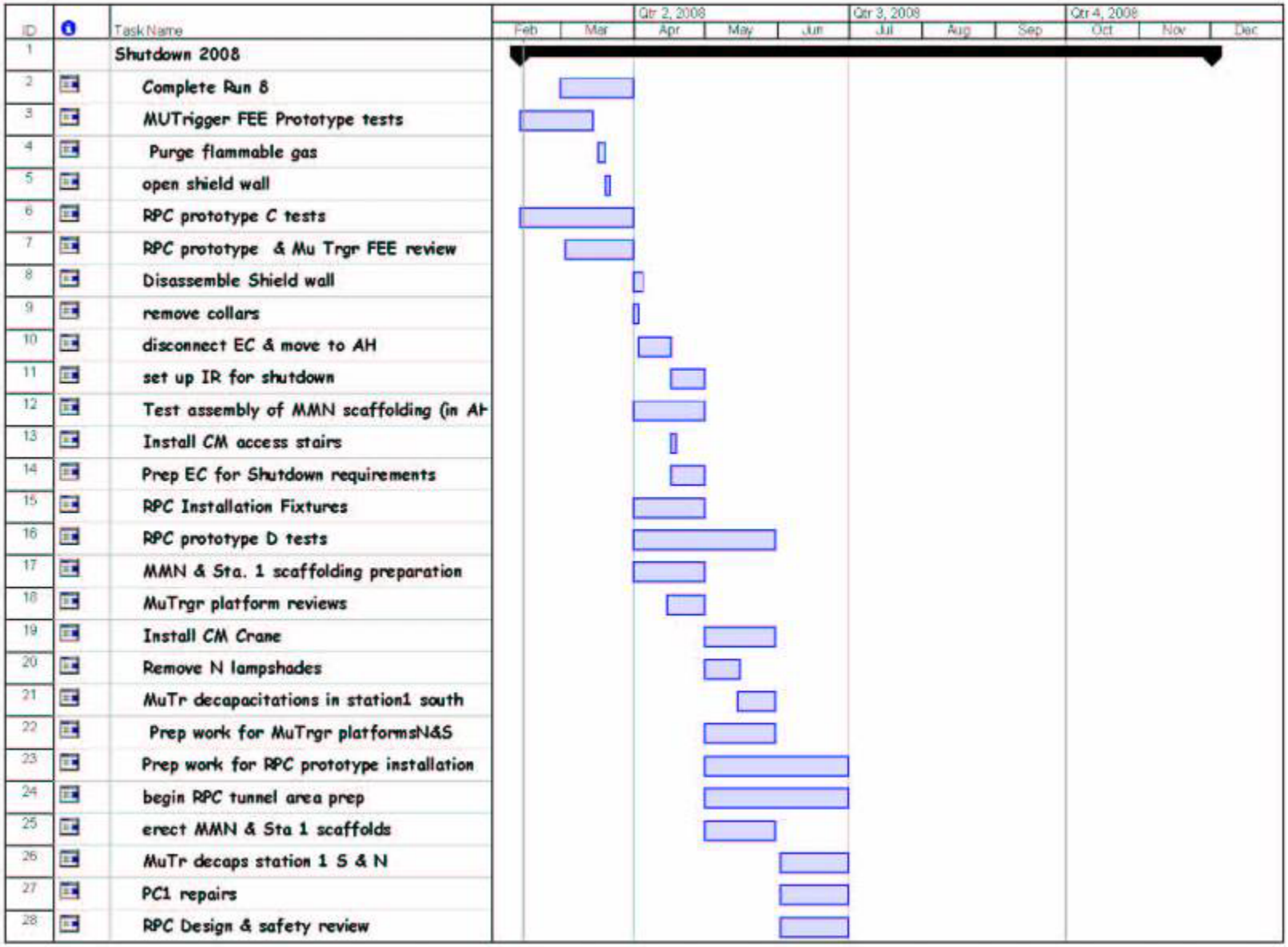

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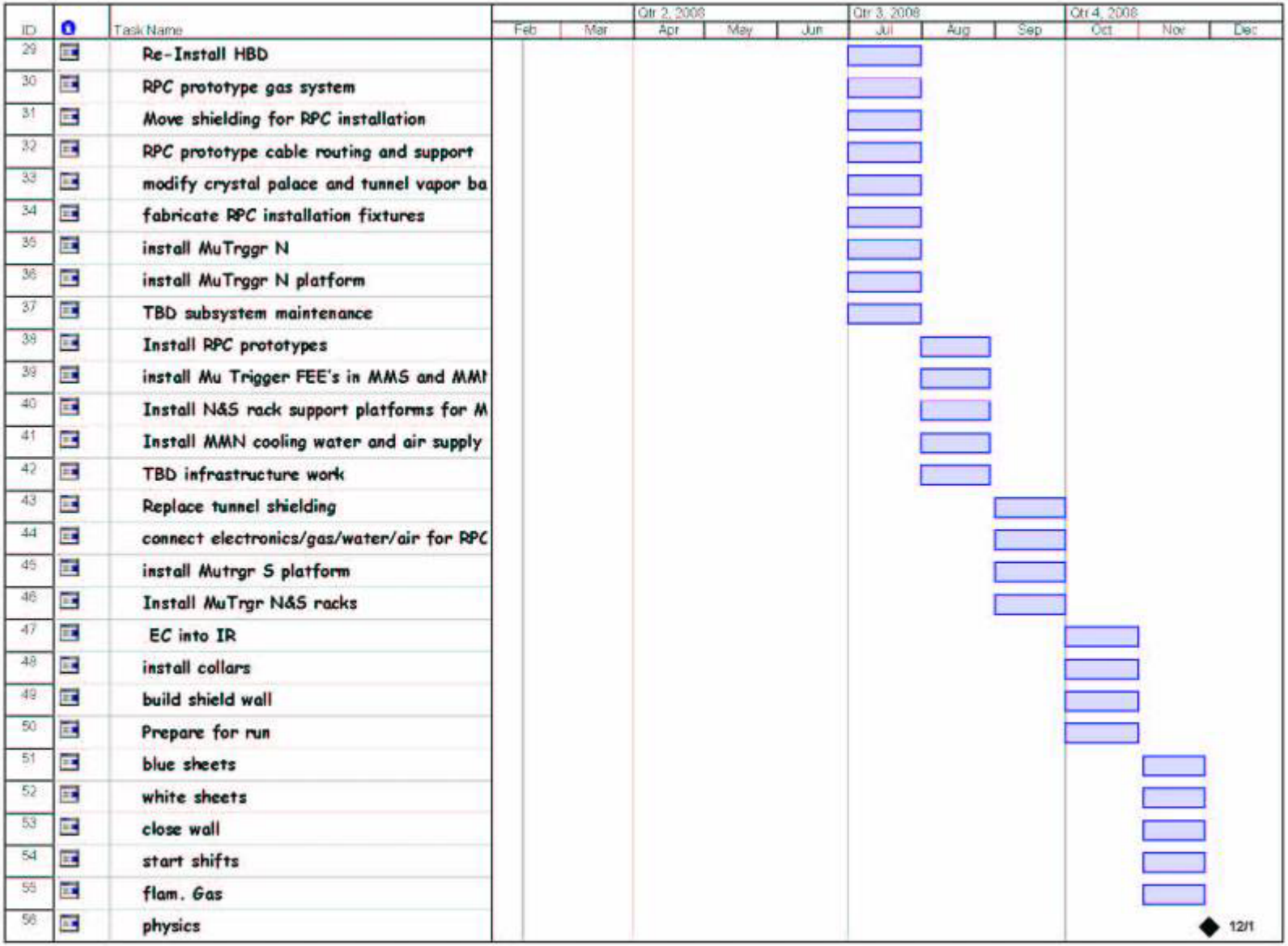

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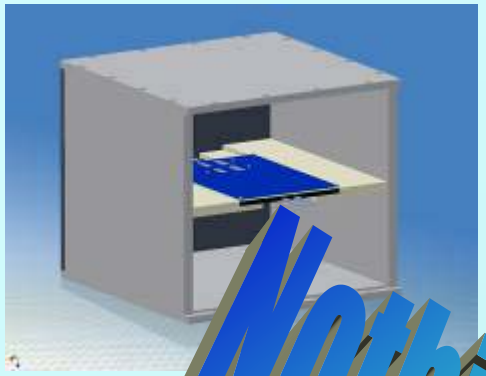
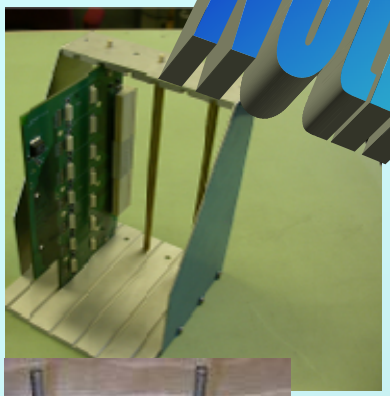
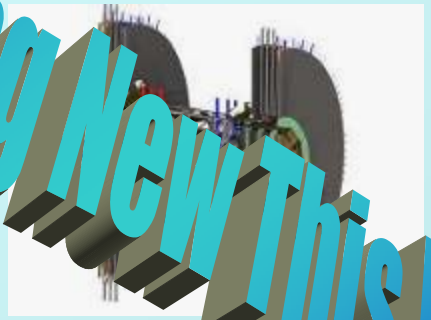
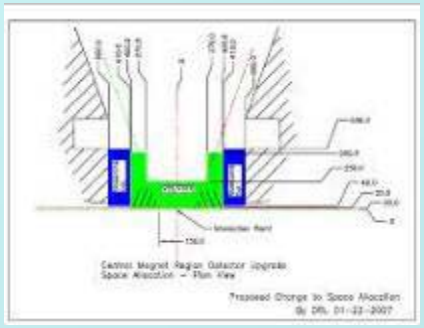
Other Work

- VTX, FVTX and NCC prototype support
  - Integration
  - Physical and Rack space
  - Infrastructure upgrades
- New Counting House Door
- VTX Prototype for run 8 ?









Nothing New This Week

Safety, Security, Etc. :

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Latest First Aid, DOE-Recordable and DART Cases

7 First Aid: 1 scraped knuckles,
1 walked into glass door/cut eyelid,
1 brushed finger against sander/abrasions
1 rushing to take conference call, slipped sprains and bruises
1 bruise by falling circuit board
1 cut using pliers to close valve
1 back pain after working on overhead fixture

2 DOE-Recordbale & DART:

1 fall hit head (unspecified situation details) ambulance
1 arm numbness after moving metal cart out of storage closet

Contractor injury (not recordable/information only): Fractured hand while drilling hole-bit stuck then dril struck hand

Snow/sleet/rain tomorrow – *Be careful!*

5 Year Plan

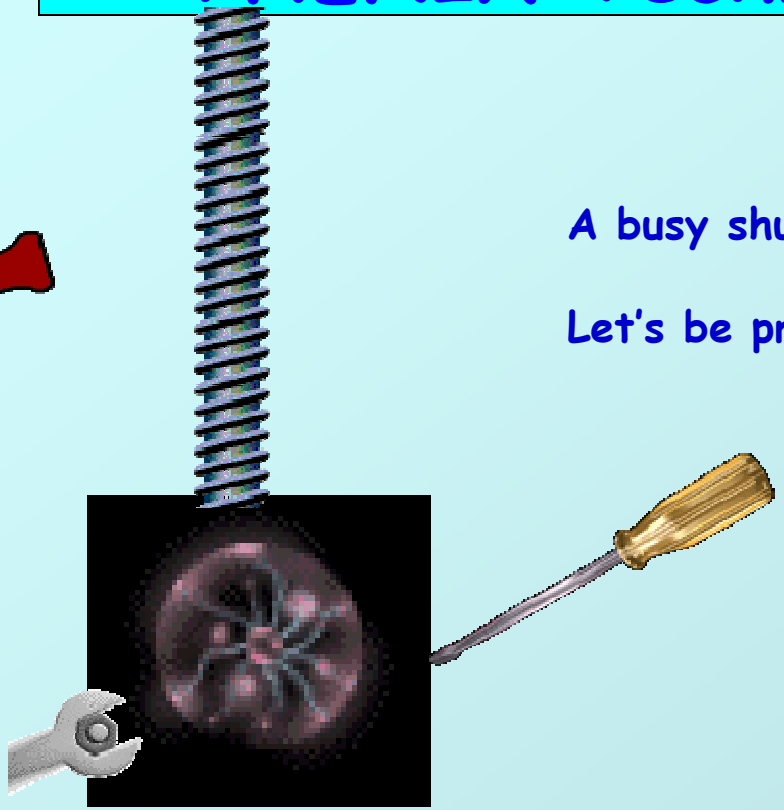
Technical Support 2008

2008	Install stations 1& 2 of MuTr FEE upgrades (north), 1 octant Cu absorber (S), 1 half otants each RPC2/3 S, MMN sta. 2 scaffolding, MuTr Sta 1 N&S scaffolding, 1 octant of MuTrigger FEE upgrades (south, sta 1 & 2), MuTr N stn. 1 & 3 decaps, MuTrigger rack platforms (N&S), CM crane, remove/replace beampipe, infrastructure upgrades & repairs, misc. subsystem work, 1 RPC rack in South tunnel, MuTrgr FEE N & S racks
2009	Remove HBD & RXNP, scaffolding in MMS, MuTr S stn. 1 & 3 decaps, RPC2 N, RPC3 N, north Cu absorbers, partial VTX, iFVTX, MuTrgr S sta 1 & 2, MuTrgr S rack, 2 racks in N tunnel, infrastructure upgrades & repairs, misc. subsystem work
2010	Remainder of VTX barrel, partial FVTX, south Cu absorber completed, MuTrgr FEE stn. 3 S, any remaining MuTr decaps, infrastructure upgrades & repairs, misc. subsystem work
2011	RPC1 N&S, NCC N, remainder of FVTX, DC West upgrade/repair, remove absorbers, infrastructure upgrades & repairs, misc. subsystem work
2012	NCC S, upgrades contingency & wishlist, infrastructure upgrades & repairs, misc. subsystem work, TBD new and improved upgrades

** Years refer to the shutdown year and follow the run with the similar number (i.e. work in 2008 is to be done in the shutdown that follows run 8, and so on)*

Where To Find PHENIX Technical Info

Technical Support 2008



A busy shutdown is coming

Let's be prepared.

Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm